

ASAP

Work Order ID 134984

134984

Page 1

July 23, 2015 9:42:13 AM

Item ID: D3180-041 Accept *N9000040100* Setup Start *NS1*
 Revision ID: Stop *NS2*
 Item Name: Strut Assembly, LH
 Start Date: 7/23/2015 Start Qty: 2.00 *2* Cust Item ID:
 Required Date: 8/7/2015 Req'd Qty: 2.00 *2* Customer:
 Reference:

Approvals: Process Plan: SM Date: 20150723 Tooling: Date: Run Start *NR1*
 QC: Date: SPC (Y/N): Date: Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
D3180	C								

100
 100 NC BRAKE 0.00
 Brake NC Memo 0.01
 Brake NC 1-Punch Tubing to length as per Dwg D3180-1 using DT8313, DWG D2638
 3 FF JUL 28 2015

110
 110 Small Fab 0.00
 Small Fab Memo 0.00
 Small Fab 1-Drill holes as per Dwg D3180
 2-Bend strut as per Dwg D3180
 3-Deburr edges
 3 FF JUL 28 2015

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐																																																													
Date :		Step #:		QTY Effective :				MRB (QSI042) Approval																																																									
Description Work Order Deviation				Disposition				Completed By																																																									
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Root Cause		FAULT CATEGORY																																																															
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐	Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐	Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐	Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐	Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐	Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐	Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐	Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐	LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐	Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐	Past Expiry Date ☐	Manufacturing Process ☐	OTHER :			
Misidentified ☐	Past Due ☐																																																																

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: <u>134984</u> Part No. <u>D3180-041</u> NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☒ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS <table style="width:100%;"> <tr> <td>Skid-tube ☐</td> <td>Cross tube ☐</td> <td>Water Jet ☐</td> <td>Engineering ☐</td> </tr> <tr> <td>Machining ☐</td> <td>Small Fab ☐</td> <td>Prod. Eng. Coord. ☐</td> <td>Quality ☐</td> </tr> <tr> <td>Thermoforming ☐</td> <td>Finishing ☐</td> <td>Rec/Store/Packaging ☐</td> <td>Other ☒</td> </tr> <tr> <td>Large Fab ☐</td> <td>Composite ☐</td> <td>Supplier ☐</td> <td></td> </tr> </table>						Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☒	Large Fab ☐	Composite ☐	Supplier ☐																																															
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Date : <u>15-07-29</u>		Step #: _____		QTY Effective : <u>1</u>		MRB (QSI042) Approval DAS 9 9-89 <u>15-07-29</u>																																																																	
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☒ OTHER: <u>use For tooling</u>																																																																							

July 23, 2015 9:42:13 AM

134984

Page 3

Accept

N900040100

Setup Start *NS1*

Stop *NS2*

Start Date: 7/23/2015 **Start Qty:** 2.00 ***2***

Cust Item ID:

Required Date: 8/7/2015 **Req'd Qty:** 2.00 ***Q***

Customer:

Reference:

Approvals: **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____ **Run** **Start** ***NR1***
 QC: _____ **Date:** _____ **SPC (Y/N):** _____ **Date:** _____ **Stop** ***NR2***

[illegible]

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QS1042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval		
Description Work Order Deviation				Disposition					
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐		Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐					
OTHER : ☐									

Work Order ID 134984

July 23, 2015 9:42:13 AM

134984

Page 4

Item ID: D3180-041

Accept

N900040100

Setup Start *NS1*

Revision ID:

Item Name: Strut Assembly, LH

Stop *NS2*

Start Date: 7/23/2015 Start Qty: 2.00

2

Cust Item ID:

Required Date: 8/7/2015 Req'd Qty: 2.00

2

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start *NR1*

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
180	QC21- Final Inspection - Work Order Release	0.00							
180									
QC	Memo	0.00							
Quality Control									

3A 20150805

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval		
Description Work Order Deviation				Disposition				Completed By	
								Lead hand / Supervisor Approval Verification	
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
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Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____							
Misidentified ☐	Past Due ☐								

Picklist Print

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Page 1

Work Order ID: 134984

134984

Parent Item: D3180-041

D3180-041

Parent Item Name: Strut Assembly, LH

Start Date: 7/23/2015

Required Date: 8/7/2015

Start Qty: 2.00

Required Qty: 2.00

Comments:

IPP Rev:A03.01.27New issueKJ/RF

IPP Rev:B 07-06-28 Asper Rev B JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
A1449 *A1449* Grommet		Purchased	No				Each	1,063.000		2			
				<u>Location</u>				<u>Loc Qty</u>					
				ST548				1063					
				1487				1063					
D2022-101 *D2022-101* Spacer		Manufactured	No				Each	170.0000		4			
				<u>Location</u>				<u>Loc Qty</u>					
				ST002				80					
				107903				80					
				ST012a				90					
				132703				90					
D2690-6 *D2690-6* Lanyard		Manufactured	No				Each	36.0000		2			
				<u>Location</u>				<u>Loc Qty</u>					
				ST009				10					
				134004				10					
				ST012a				26					
				134527				26					

**

FF

JUL 30 2015

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FF

JUL 30 2015

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JUL 30 2015

Picklist Print

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Page 2

Work Order ID: 134984

Parent Item: D3180-041

Parent Item Name: Strut Assembly, LH

134984

D3180-041

Start Date: 7/23/2015

Required Date: 8/7/2015

Start Qty: 2.00

Required Qty: 2.00

M304TR0.750W.065

Purchased

No

f

158.9124

7.543789

M304TR0 750W 065

304 RD Tube .750 x .065W

FF

JUL 28 2015

Location

Loc Qty

Loc Code

GA002

158.9124

114002

10

118390

2

m129493

146.9124

Each

2.0000

2

FF

JUL 30 2015

MS17984-C310

Purchased

No

MS17984-C310

Quick Release Pin

Location

Loc Qty

Loc Code

ST315

132852

2

m130953

1

m132699

1

Each

1,184.000

2

FF

JUL 30 2015

MS21042L3

Purchased

No

MS21042L3

Nut

Location

Loc Qty

Loc Code

FP001

393

M130922

393

GA

323

M131317

323

ST305

468

116549

12

126333

49

M128754

2

M132123

17

M132382

388

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Shop Packet Print

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Picklist Print

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Page 3

Work Order ID: 134984

134984

Parent Item: D3180-041

D3180-041

Parent Item Name: Strut Assembly, LH

Start Date: 7/23/2015

Required Date: 8/7/2015

Start Qty: 2.00

Required Qty: 2.00

MS27039-1-10

Purchased

No

Each

679.0000

2

MS27039-1-10

SCREW

FF

JUL 30 2015

Location

Loc Qty

Loc Code

CA

41

m128635

41

GA

234

m129541

234

ST273A

200

m132677

200

ST285

204

m123522

2

m130358

2

m132640

200

NAS1149D0363J

Purchased

No

Each

1,804.000

6

NAS1149D0363.J

Washer

FF

JUL 30 2015

JUL 30

Location

Loc Qty

Loc Code

CA

569

m130799

569

GA

1043

m128429

134

m132677

909

ST269

192

m126319

7

m131618

1

m132317

184

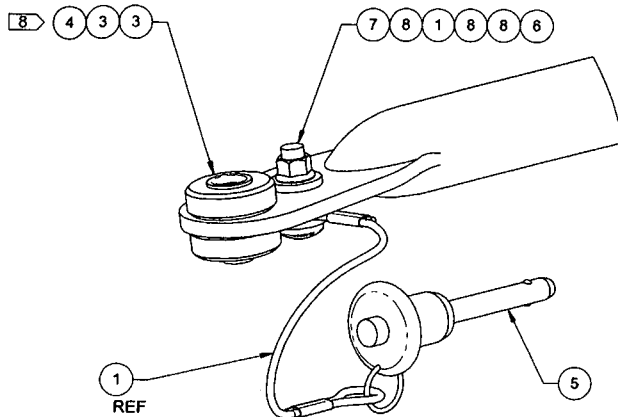
July 23, 2015 9:42:21 AM

Shop Packet Print

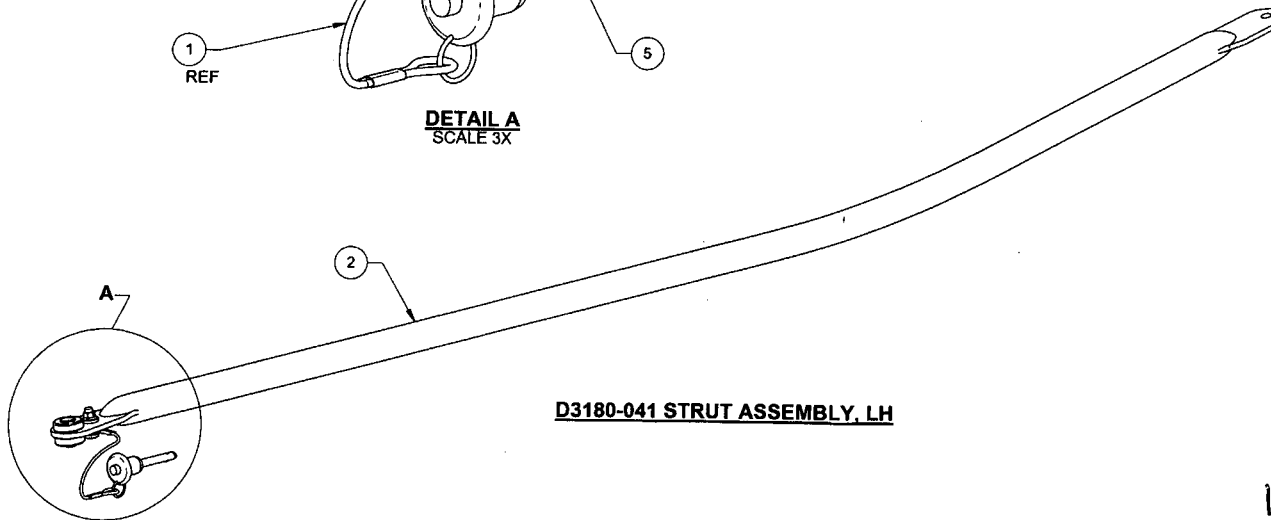
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8 7 6 5 4 3 2 1

ITEM	QTY -041	P/N	DESCRIPTION
	X	D3180-041	STRUT ASSEMBLY, LH
1	1	D2690-6	LANYARD
2	1	D3180-1	STRUT
3	2	D2022-101	SPACER
4	1	A1449	GROMMET
5	1	MS17984-C310	PIN, QUICK RELEASE
6	1	MS21042L3	NUT, SELF-LOCKING
7	1	MS27039-1-10	SCREW, PAN-HEAD
8	3	NAS1149D0363J	WASHER



DETAIL A
SCALE 3X



D3180-041 STRUT ASSEMBLY, LH

RELEASED
2014-10-04
WP

134984
54 15/7/23

C	ADD D3180-042/-2 (SHEETS 2 AND 4).	REF: NCR14-3457.	MB	14.03.24
B	CURVE ADDED		DC	07.05.23
A	NEW ISSUE		RF	03.01.06
REV.	DESCRIPTION		BY	DATE
DESIGN	DS	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA		
DRAWN	MB			
CHECKED	AP	DRAWING NO.	REV. C	
MFG. APPR.	JLM	D3180	SHEET 1 OF 4	
APPROVED	MP	TITLE	SCALE	
DE APPR.	DS	STRUT ASSEMBLY	NTS	
DATE	14.03.24	COPYRIGHT © 2003 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE, OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.		

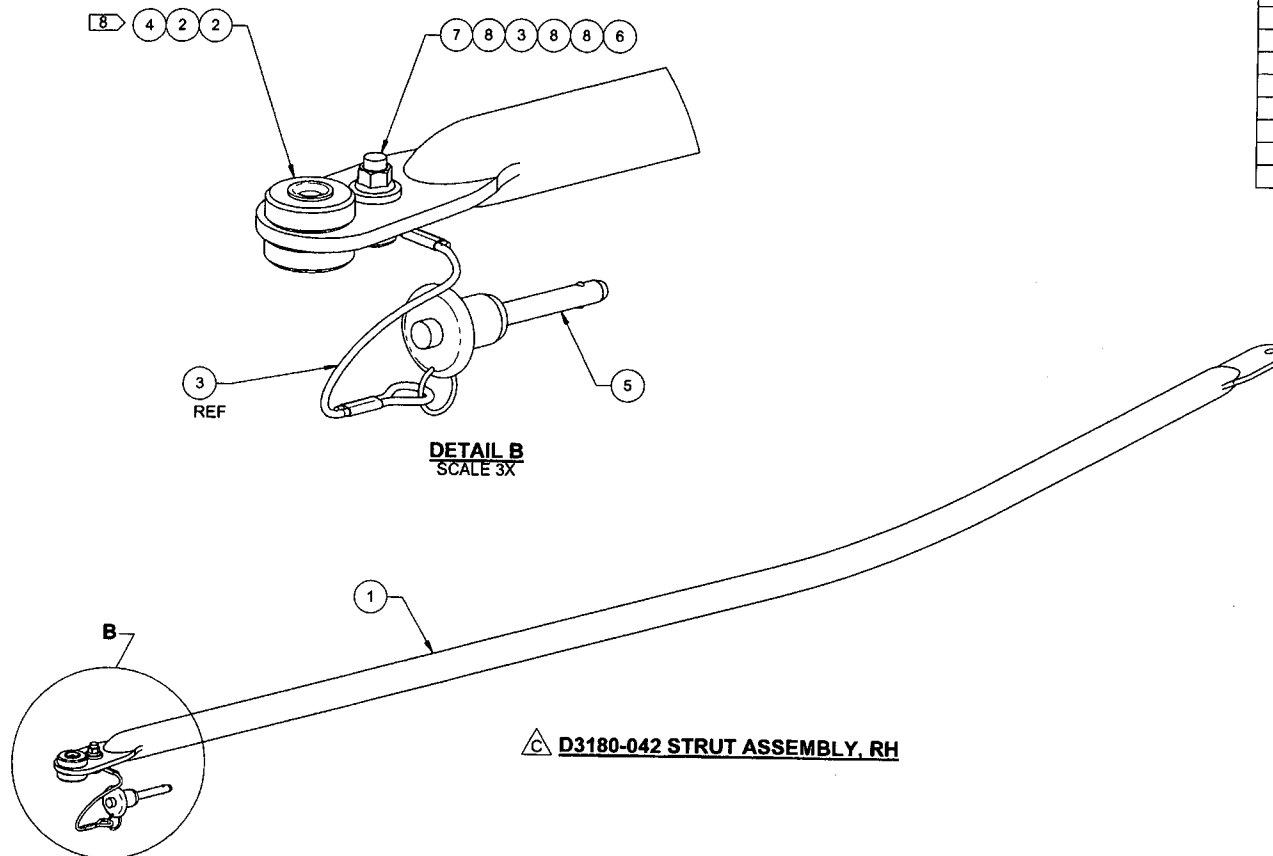
APPROVED

NOTES:

- 1) MATERIAL: N/A
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY WITH DART P/N "D3180-041" AND BATCH NUMBER PER QSI 044 6.1
- 7) WEIGHT: 1.86 lbs
- 8) SWAGE D2022-101 SPACERS ONTO D3180-1 STRUT USING A1449 GROMMET

8 7 6 5 4 3 2 1

ITEM	QTY -042	P/N	DESCRIPTION
	X	D3180-042	STRUT ASSEMBLY, RH
1	1	D3180-2	STRUT
2	2	D2022-101	SPACER
3	1	D2690-6	LANYARD
4	1	A1449	GROMMET
5	1	MS17984-C310	PIN, QUICK RELEASE
6	1	MS21042L3	NUT, SELF-LOCKING
7	1	MS27039-1-10	SCREW, PAN-HEAD
8	3	NAS1149D0363J	WASHER



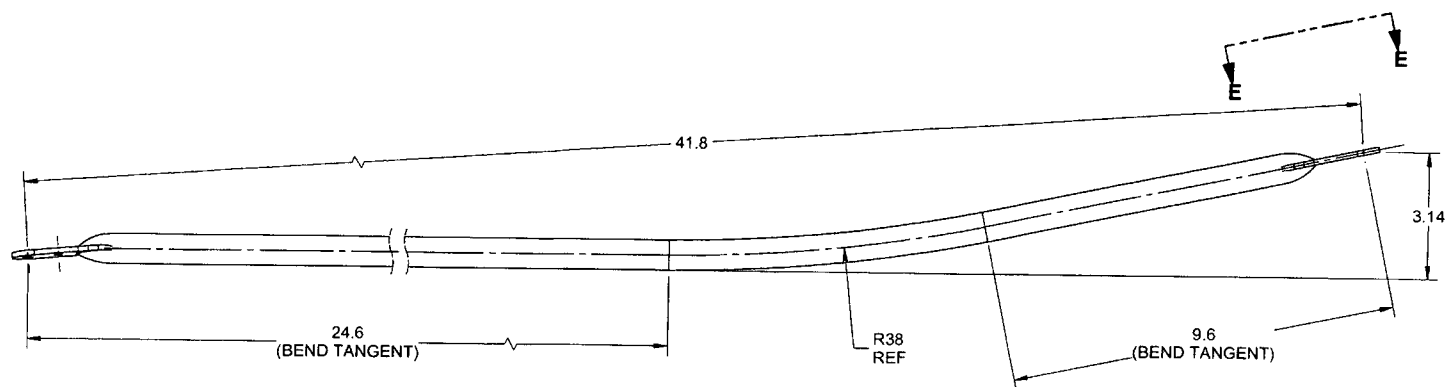
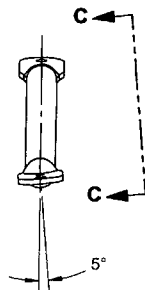
NOTES:

- 1) MATERIAL: N/A
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY WITH DART P/N "D3180-042" AND BATCH NUMBER PER QSI 044 6.1
- 7) WEIGHT: 1.86 lbs
- 8) SWAGE D2022-101 SPACERS ONTO D3180-2 STRUT USING A1449 GROMMET

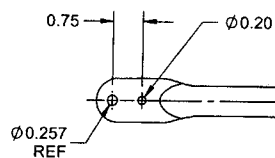
APPROVED

DESIGN	DS	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	MB		
CHECKED	AP	DRAWING NO.	REV. C
MFG. APPR.	JLM	D3180	SHEET 2 OF 4
APPROVED	MP	TITLE	SCALE
DE APPR.	DS	STRUT ASSEMBLY	NTS
DATE	14.03.24	COPYRIGHT © 2003 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

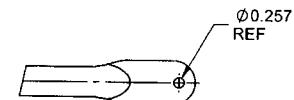
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2014-10-04



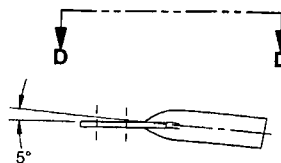
D3180-1 STRUT



VIEW D-D 8



VIEW E-E 8



VIEW C-C

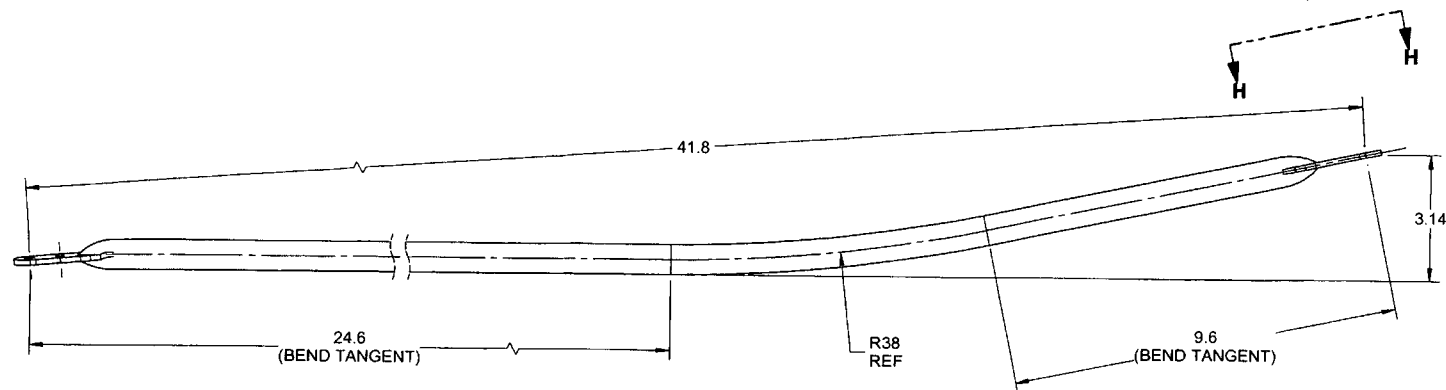
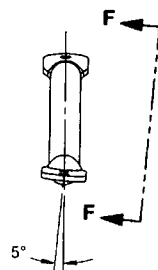
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2014-10-04

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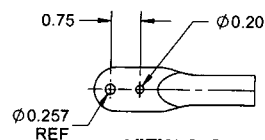
- 1) MATERIAL: AISI 304/316 STAINLESS STEEL SEAMLESS ROUND TUBING
Ø 0.75 X 0.065 WALL, PER ASTM A213 OR ASME SA213 OR ASTM A269
REF. DART SPEC. M304TR0.750W.065
- 2) FINISH: POWDER COAT WHITE (4.3.5.2) PER DART QSI 005 4.3
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: 1.82 lbs
- 8) PUNCH: PER SPEC. CONTROL DWG D2638

APPROVED

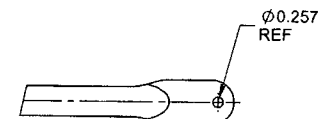
DESIGN	DS	DART AEROSPACE LTD	
DRAWN	MB	HAWKESBURY, ONTARIO, CANADA	
CHECKED	AP	DRAWING NO.	REV. C
MFG. APPR.	JLM	D3180	SHEET 3 OF 4
APPROVED	MP	TITLE	SCALE
DE APPR.	DS	STRUT ASSEMBLY	NTS
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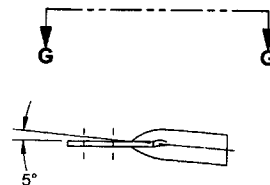
D3180-2 STRUT



VIEW G-G



VIEW H-H



SECTION F-F

NOTES:

- 1) MATERIAL: AISI 304/316 STAINLESS STEEL SEAMLESS ROUND TUBING
Ø0.75 X 0.065 WALL, PER ASTM A213 OR ASME SA213 OR ASTM A269
REF. DART SPEC. M304TR0.750W.065
- 2) FINISH: POWDER COAT WHITE (4.3.5.2) PER DART QSI 005 4.3
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: 1.82 lbs
- 8) PUNCH: PER SPEC. CONTROL DWG D2638

RELEASED
2014-10-04

APPROVED

DESIGN	DS	DART AEROSPACE LTD	
DRAWN	MB	HAWKESBURY, ONTARIO, CANADA	
CHECKED	AP	DRAWING NO.	REV. C
MFG. APPR.	JLM	D3180	SHEET 4 OF 4
APPROVED	MP	TITLE	SCALE
DE APPR.	DS	STRUT ASSEMBLY	NTS
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